



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,788	12/06/2001	Philippe Peltie	034299-366	8545

7590 06/16/2005

Robert E Krebs  
Thelen Reid & Priest LLP  
P O Box 640640  
San Jose, CA 95164-0640

EXAMINER
----------

SIEFKE, SAMUEL P

ART UNIT	PAPER NUMBER
----------	--------------

1743

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/980,788

Applicant(s)

PELTIE ET AL.

Examiner

Samuel P. Siefke

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 3/10/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-6, 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant claims "first mobile support that may be coated with reagent" It is indefinite to may be claim a coated reagent, the Examiner suggests using "optionally" instead of "may be".

It is unclear as to how a deflection in response to a change in weight is "may be" Examiner suggest replacing "may be" with "is" because a deflection occurs only when a change in weight on the first mobile support occurs.

Claim 1 is directed to a biological or chemical analysis platform but nowhere in the body of claim 1 is the limitation of a biological or chemical sample. Examiner suggest the Applicant after "weight supported by the first mobile support" insert "said change in weight corresponding to a binding of an analyte of interest," Further claim 1 is directed to an analysis platform but does not provide a structure that is capable of analysis. How is the change in weight detected or analyzed?

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thundat et al. (USPN 5,719,324) in view of WO 94/18697

Thundat teaches a microcantilever sensor that comprises a microcantilever attached to a piezoelectric transducer. The microcantilever sensor is fabricated with at least one attached to a piezoelectric transducer. The surface is treated with a compound selective substance having substantially exclusive affinity for a targeted compound in a monitored atmosphere. The sensor is also provided with a frequency detection means and a bending detection means. The frequency detection means is capable of detecting changes in the resonance frequency of the vibrated in the monitored atmosphere. The bending detection means is capable of detecting changes in the bending of the vibrated in the monitored atmosphere coactively with the frequency

detection means. The piezoelectric transducer is excited by an oscillator means which provides a signal driving the transducer at a resonance frequency inducing a predetermined order of resonance on the partially treated. Upon insertion into a monitored atmosphere, molecules of the targeted chemical attach to the treated regions of the resulting in a change in oscillating mass as well as a change in spring constant thereby influencing the resonant frequency of the oscillation. Furthermore, the molecular attachment of the target chemical to the treated regions induced areas of mechanical strain in the consistent with the treated regions thereby influencing bending. The rate at which the treated accumulates the target chemical is a function of the target chemical concentration. Consequently, the extent of oscillation frequency change and bending is related to the concentration of target chemical within the monitored atmosphere (abstract; col. 3, line 40- col. 4, line 65; col. 7, line 66 – col. 8, line 45; fig. 12a-12d).

Thundat does not teach a microcantilever sensor the comprises a beam having a spiral shape and a mobile support being formed at the center of the spiral.

WO 94/18697 teaches microcantilevers that are in various shapes that include triangular and rectangular structures, as well as curved structures such as circles, ellipses, and parabolas for use in the fabrication of fixed and variable inductors (page 8, see fig. 2, 7, 9, 13). It would have been obvious to one having an ordinary skill in the art to modify Thundat to employ the shapes of the cantilevers of WO 94/18697 in order to expose greater surface area to allow a biological sample to bind to an analyte on the surface of the cantilever.

***Response to Arguments***

Applicant's arguments with respect to claims 1-6, 8 and 9 have been considered but are moot in view of the new ground(s) of rejection.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel P. Siefke whose telephone number is 571-272-1262. The examiner can normally be reached on M-F 7:00am-5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1700. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam P. Siefke



June 13, 2005

  
Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700